

**ELEVEN NEW SPECIES OF PACIFIC NORTHWEST ELATERIDAE**  
(COLEOPTERA)

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In connection with the task of preparing keys to the Elateridae for "The Beetles of the Pacific Northwest," Volume 5, by Dr. M. H. Hatch, it was necessary to describe some 40 new species. Eleven species are being described at this time. These species will be keyed to their proper relationship with the older species in the above publication within the next year.

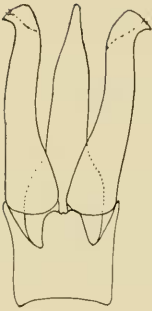
Paratypes are deposited in various collections. Those collections are indicated by initials under the discussion of each species. The initials and their meanings are as follows: ANSP, Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.; ATM, A. T. McClay; CAS, California Academy of Sciences, San Francisco, Calif.; CDA, Canadian Department of Agriculture, Ottawa, Ontario; HPL, H. P. Lanchester; JHB, J. H. Baker; JNK, J. N. Knull; KEG, K. E. Gibson; LGG, L. G. Gentner; MCL, M. C. Lane; MCZ, Museum of Comparative Zoology, Cambridge, Mass.; MHH, M. H. Hatch; UBC, University of British Columbia, Vancouver, B. C.; UC, University of California, Berkeley, Calif.; UI, University of Idaho, Moscow, Idaho; USNM, U.S. National Museum, Washington, D. C.; WSC, Washington State College, Pullman, Wash.

***Ctenicera barri*, new species**

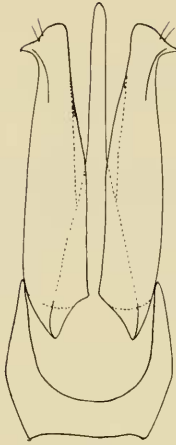
Holotype male, length 10.5 mm., width 4.0 mm., (paratype males 9.2–10.7 mm.). Color black; except orange on anterior margin of pronotum side margins above and beneath, epipleura of elytra, narrow dorsal side margins on anterior half of elytra, basal spots two intervals wide, and an irregular spot near apex of each elytron; pronotum smooth and shiny, elytra less so due to reticulated surface; vestiture hardly noticeable above, very fine and dark brown beneath.

Head quadrate, slightly concave above, horizontally rounded between eyes, front not margined in middle, moderately finely punctate, surface shiny smooth. Antennae pectinate from 3rd to 10th segments, inclusive, second segment small and 11th elongate with tip pinched and pointed; 2nd to 6th inclusive and 11th with the following lengths and widths in mm.:  $.20 \times .20$ ,  $.50 \times .45$ ,  $.50 \times .50$ ,  $.60 \times .60$ ,  $.65 \times .60$ ,  $1.00 \times .20$ ; pectinations extend .25 to .35 mm. longer than bases from 4th to 10th segments; antennae extending four segments beyond posterior angles of pronotum.

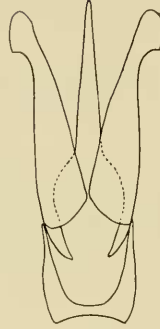
Pronotum one-third wider than long, very convex on anterior half of disc, with margins thickened and explanate, including hind angles, which are divaricate and pointed. Punctures simple and moderately spaced. Middle line smooth on basal half and basal plica very fine. Scutellum flat, as long as wide, blunt posteriorly, simply punctate with a slight raised middle line.



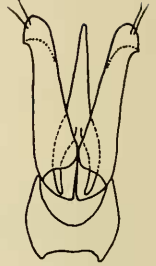
BARRI  
1



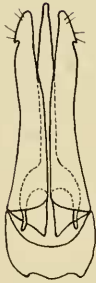
MANISI  
2



GIBSONI  
3



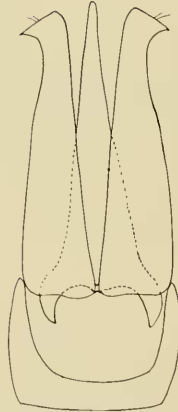
JONESI  
4



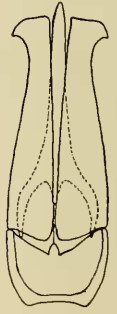
SHIRCKI  
5



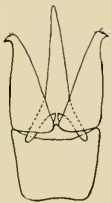
SNAKENSIS  
6



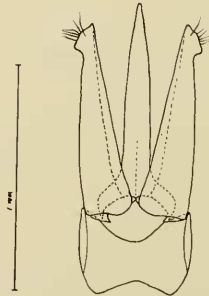
MONTANUS  
7



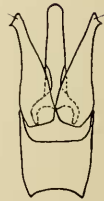
OLYMPUS  
8



GENTNERI  
9



BAKERI  
10



FUSCA  
11

Elytra twice as long as wide, parallel in anterior two thirds, then broadly rounded to apex, together rather robustly convex; striae shallow with elongate punctures, intervals reticulately punctured, making surface rougher than rest of body.

Propleura coarsely, deeply punctate, surface shiny, posterior margins broadly sinuate near produced tip; prosternum coarsely punctate, anterior lobe short, broadly rounded, mucro convex between prolegs, sharply bent inwards and punctate to narrowed tip. Metasternum and abdomen with legs finely rather inconspicuously punctate, legs black with yellow claws. Aedeagus as figured. (fig. 1).

Allotype female, length 12.3 mm., width 5.0 mm., (paratype female  $10.6 \times 4.4$  mm.). Differs from male in having the antennae coarsely serrate, not pectinate, and only extending to the posterior angles of the pronotum. Female is colored same as in male with the body somewhat more convex and robust.

Holotype male, Lolo Pass, Idaho Co., Idaho, June 14, 1963, W. F. Barr collector. Allotype female, Lolo Pass, Idaho Co., Idaho, June 30, 1964, W. F. Barr collector, both deposited in the California Academy of Sciences, San Francisco. Paratypes (74): Lolo Pass, Idaho Co., Idaho, June 14, 1963 and June 30, 1964, W. F. Barr collector, except some collected by O. O. Fillmore, G. B. Hewitt, and R. L. Wescott. The paratypes are being deposited in the following collections: UI, USNM, CAS, CDA, ANSP, MCZ, MHH, JNK, MCL.

Remarks: There is some variation in the yellowish-orange coloration; some specimens have anterior margin of pronotum with deep central notch of that color, others with anterior margin black, except at angles. Elytral spots vary only slightly, the apical spot usually extending from 4th interval to margin, irregular in shape. The yellowish-orange color was bright red in living specimens. The series was collected sweeping in a swampy area, and I am naming the species after my friend Dr. W. F. Barr, University of Idaho, Moscow, who has furnished me with several new species.

This species is unique in several ways: first, by having pectinate antennae which character occurs in only six other elatrid species from North America, only one of which is included in this genus, namely *C. kendalli* Kby.; second, the coloration is rather spectacular; third, the species is closely related by shape, size and male genitalia to only one other known North American species, namely *C. appressus* Rand., from New Jersey, New York, and Minnesota, also found in swampy areas. The latter have the usual serrate antennae. I have placed this species in *Ctenicera* because of its pectinate antennae, although both *appressus* and *barri* have many characters in common with the genus *Eanus* of LeConte, which already includes several not too closely related species.

#### *Ctenicera manisi*, new species

Holotype male, length 14.8 mm. (paratype males 12–15 mm.), width 3.4 mm. Form elongate, narrow, and convex; body black, except 4th to 7th intervals of

elytra which are flavous their whole length, the light color also including the 1st, 2nd, and 3rd intervals at apex; legs dark brown on femur to light brown on tarsi; surface shiny on dorsum, less so beneath except on prosternum, with fine gray vestiture, somewhat denser beneath.

Head wider than long between eyes, slightly concave, deeply umbilicately punctured on front and densely punctate on base at insertion into pronotum; eyes slightly prominent, about as wide as anterior angles of pronotum. Antennae very long, extending four segments beyond posterior tips of pronotum; second segment small, third much larger and similar in shape to fourth, third to eleventh opaquely punctured; 2nd to 6th inclusive and 11th with following widths and lengths, in mm.:  $.15 \times .25$ ,  $.40 \times .60$ ,  $.45 \times .70$ ,  $.45 \times .70$ ,  $.45 \times .80$ , and  $.20 \times 1.10$ .

Pronotum more than one-half longer than wide on middle lines, sides gradually tapering to posterior angles which are only slightly divaricate, finely carinate and blunt; disc finely umbilicately punctured, quite densely so on sides, which are obtusely margined, hardly showing from above; posterior third vaguely grooved, but with shallow depressions on each side of mid-line just in front of deeply emarginate posterior margins. Scutellum longer than wide, punctate and more setose than remainder of body.

Elytra two and one-half times longer than pronotum, parallel in front gradually tapering to apex, which is narrowly rounded; each elytron flat near suture, convex towards side, which is hardly visible from above; striae distinct and finely punctate, intervals flat and finely punctate.

Propleura densely umbilicately punctured, suture single with no flare in front; posterior margin not emarginate with outer angle rectangular, not produced. Prosternum sparsely umbilicately punctate, mucro long, bent inwards with smooth blunt carina between procoxae.

Metasternum and abdomen moderately densely punctured, surface slightly less shiny than pronotum and prosternum. Legs medium long, tarsal segments of metathoracic legs measuring, .80, .50, .40, .20, .55 mm. in length. Aedeagus as figured (fig. 2). Female is not known at present.

Holotype male, Winona, Idaho Co., Idaho, Apr. 29, 1953, W. F. Barr collector, specimen in California Academy of Sciences (San Francisco). Paratypes (20): IDAHO: Winona, Apr. 29, 1953 (W. F. Barr); Gifford, May 24, 1951, 2900' (W. F. Barr); May 27, 1949 (W. F. Barr); NezPerce, May 20, 1949 (H. C. Manis); Apr. 27, 1949, 3132' (A. J. Walz); Lewiston, May 2, 1937 (C. C. Ball); Webb, May 18, 1934 (J. N. Knull). The paratypes are being deposited in the following collections: UI, USNM, CDA, MCZ, ANSP, JNK, MCL, and MHH.

Remarks: This species belongs in a group with *horni* Schw., *macer* Fall, *linearis* Fall, and *patricia* VanD., having auriculate posterior angles on pronotum, and is closely related to the last species differing in its longer antennae with wider and longer segments, more sparsely punctate disc of pronotum, less flavous coloration, heavier vestiture, and darker legs. From *linearis* it varies in being shorter and stouter, more convex on sides of pronotum, elytral intervals flatter, and darker beneath. It differs from the all brown *macer* in color and shorter

antennae. It was collected in sweeping "Idaho" fescue grasses on upland prairies in north central Idaho. It is named for my friend Dr. Hugh C. Manis, Head, Department of Entomology at Univ. of Idaho, Moscow. Van Dyke's *patricia* seems to be a species limited to coastal areas of Oregon and Washington.

***Ctenicera gibsoni*, new species**

Holotype male, length 11.2 mm., (paratypes 9.7–13.4 mm.), width 2.7 mm. Form elongate, narrow, parallel, slightly convex; body light brown above and beneath, with disc of pronotum and antennae darker brown; surface somewhat shiny, slightly obscured with a fine grey vestiture only slightly finer beneath.

Head quadrate, coarsely deeply punctured; front flat between eyes, latter prominent, above as wide across the eyes as anterior angles of pronotum; antennae long, extending three and a half segments beyond posterior tips of pronotum; second segment shiny and small, third similar in shape to fourth, following segments all opaquely punctured, segments 2nd to 6th inclusive and 11th with following widths and lengths, in mm.:  $.20 \times .20$ ,  $.25 \times .45$ ,  $.35 \times .50$ ,  $.35 \times .60$ ,  $.35 \times .65$ , and  $.20 \times .80$ .

Pronotum one-half longer than wide ( $2.9 \times 1.9$  mm.), excluding divaricate posterior angles, sides parallel, acutely defined and slightly explanate anteriorly, very finely carinate on posterior angles which are quite pointed; disc convex, densely punctate, somewhat more finely so at sides, with slight groove extending from base almost to apex. Scutellum slightly longer than wide, flat finely punctate, with vestiture slightly longer than on rest of body.

Elytra nearly three times longer than wide ( $8.0 \times 2.8$  mm.), sides straight and parallel to apical third, gradually narrowed to point at apex; each elytron flat near suture, convex near lateral margins which are hidden in dorsal view except in apical third; intervals flat and finely punctate.

Propleura densely and finely umbilicately punctate, posterior margin deeply sinuate near angles, which are long and pointed; sternopleural suture single and not flared in front. Prosternum long, mucro bent inwards and concave between procoxae, punctures umbilicate and separated by distance approximately equal to own diameters, surface shiny.

Metasternum and abdominal segments fairly densely and finely punctate, but leaving surface shiny under a fine pubescence. No impunctate areas are present on lateral portion of segments. Legs long, metathoracic tarsal segments measuring:  $.60$ ,  $.40$ ,  $.35$ ,  $.20$ ,  $.50$  mm. Aedeagus as figured (fig. 3).

Female unknown.

Holotype male, Walla Walla, Washington, 2000', Apr. 24, 1937, M. C. Lane collector, specimen in the U. S. National Museum, No. 67818. Paratypes (60): OREGON: Baker, May 5 (Knull); Blue Mts., Tollgate Rd., June 4 (Lane); Blue Mts., Cottonwood Canyon, Apr. 20 (Jones); Blue Mts. Gov't Rd., Apr. 28 (Lanchester); WASHINGTON: Blue Mts., Apr. 24 (Jones); Blue Mts., Mormon Grade, Apr. 25 (Lane); same, May 4 (Lane); same June 21 (Lanchester); Walla Walla, 2000', Apr. 24 (Lane); Walla Walla, Mormon Grade, Apr. 23 (Gibson); Walla Walla, Kooskosskie, May 21 (Lanchester).



The paratypes are being deposited in the following collections: USNM, CAS, CDA, MCZ, ANSP, MCL, KEG, MHH, JNK, and HPL.

Remarks: This species has been collected frequently from brushy pastures on lower slopes of western Blue Mts., at approximately 2000 feet, near Walla Walla, Washington, and to date the female has not been found, though industriously searched for. The series of males is quite uniform in color, shape, and size, except the pronotum is sometimes piceous. It is somewhat related to *tenella* Van Dyke and *protracta* LeC. It differs from former in its finer punctation and somewhat finer denser vestiture, as well as in lack of impunctate spots along the side margins of the abdominal segments.

The antennae are shorter and wider than in *tenella*, and *gibsoni* differs in posterior margin of propleura being sinuate, while in *tenella* it is straight with wider, blunter apex to angle. From *protracta* it varies in many ways, longer antennae, lighter color, finer punctation, flat intervals on elytra, and different distribution. This species is named for Kenneth E. Gibson, my associate in wireworm research and good friend for many years.

***Limonijs jonesi*, new species**

Holotype male, length 6.4 mm. (paratype males 5.6–7.5 mm.), width 2.2 mm. Form small, robust, convex; body black except episterna of elytra which are dark brown, antennae black, legs dark brown to black; surface somewhat shiny with short gray to yellowish vestiture.

Head quadrate, coarsely deeply punctured; frons broadly slightly concave; clypeal margin entire, slightly emarginate; antennae extending one segment beyond posterior angles of pronotum, second and third segments cylindrical, shiny, subequal, not quite twice as long as wide, together longer than fourth, which is broadly triangular, sixth segment only slightly longer than wide, fourth to tenth slightly serrate and opaquely punctate.

Pronotum quadrate, as wide as long, sides slightly arcuate at middle, broadly rounded to anterior angles, slightly sinuate in front of posterior angles, the latter slightly divergent with short carina; disc convex, side margins hidden from above, surface shiny, coarsely, deeply punctate, densely on sides, less so on disc, with semblance of impunctate middle line. Scutellum moderately prominent, finely densely punctate and pubescent.

Elytra one-tenth wider than pronotum, about two and one-quarter times as long as wide, sides straight and parallel in basal two-thirds, broadly arcuate to apices, which are bluntly rounded; each elytron slightly convex on disc, more so towards sides, lateral margin barely showing from above; striae distinct with elongate nearly confluent punctures, intervals usually flat with three irregular rows of fine punctures.

Propleura densely, almost umbilicately punctate; sternopleural plate excavated and slightly flared in front, grooved nearly one-half distance to procoxa; posterior margin of propleura slightly emarginate with small notches; hind angles barely produced and rectangularly blunt. Prosternum more deeply and densely punctate than propleura. Abdomen even more finely and distinctly punctured. Aedeagus as figured (fig. 4).

Allotype female, length 7.7 mm. (paratype females 6.8–8.1 mm.), width 2.5 mm. Differs from male in being on average slightly larger with antennae barely reaching to posterior angles of pronotum.

Holotype male, Blue Mts., Mottet R. S., Oregon, 4500', June 27, 1935, M. C. Lane collector; allotype female: Same locality and date, both deposited in U. S. National Museum, No. 67819. Paratypes (over 100): OREGON: Blue Mts., Mottet R. S. (sometimes labeled Mottet Meadows and the R. S. should be G. S. in Forest Service nomenclature) 4500', June 7 to July 3 (Lane, Jones, and Lanchester); Blue Mts., Tollgate R. S., 5000', May 23 to June 29 (Lane, Lanchester, Fender); Meacham, 4000', May 13 and 22 (Lane, Lanchester); Whitman N. F., Hoodoo G. S., 6000' and Trail Cr., 5500', June 12 (Lane, Lanchester); Granite, June 16 (Lane); Bly, June 13 (Fender); Lake O'Woods, Klamath Co., June 11 to July 4 (Gentner, McClay); Steen Mts., Fish Lake, Harney Co., 8000', June 22 (Malkin); Forest Grove, May 23 (Rockwood); Gaston, April 22 (Rockwood); McMinnville, May 21 and June 21 (Fender); Baker, June 11 (Baker). IDAHO: Smith's Ferry, June 23 (Lane, Lanchester); McCall, Brundage Mt., 6000', June 23 (Lane). CALIFORNIA: Mt. Lassen N. P., June 10 to July 25 (Nelson, Reynolds); Donner Creek, Nevada Co., June 10 (Fender).

The paratypes are being deposited in the following collections: USNM, CAS, UC, CDA, MCZ, ANSP, ATM, JNK, LGG, and JHB.

Remarks: This large series varies little in size and shape, the punctures of thorax and elytra always being distinct. This species might be confused with *nitidulus* Horn, but when placed side by side it is easily distinguished. This new species is more convex dorsally, especially on pronotum, with posterior angles usually divergent and carina shorter than in *nitidulus*. Antennae of latter are more slender and segments more elongate, and general punctuation is finer on body.

Male genitalia of *jonesi* is quite different from *nitidulus*, being longer, with broader and more elongate tips to the lateral lobes.

*Limonijs jonesi* is fairly common on very short grass in mountain meadows and along edges of mountain streams soon after the snow is melted. Specimens from Willamette Valley are indistinguishable from mountain forms, but seem to be quite rare. This species is named for my deceased friend Edward W. Jones, who was associated with me in research on the Elateridae for many years in the Pacific Northwest.

#### ***Limonijs shireki*, new species**

Holotype male, length 8.2 mm., width 2.4 mm. (paratype males length 7.2–9 mm.). Body above and beneath black, with anterior half of elytra reddish orange in color; vestiture fine and dark brown on prothorax, lighter brown on elytra to yellowish on abdomen, not obscuring integument entirely.

Head quadrate, densely umbilicately punctate; frons slightly concave, clypeal margin slightly depressed and arcuate and not raised; antennae slightly shorter than pronotum at posterior angles, 2nd and 3rd segments small subequal, to-

gether slightly longer than 4th, with following six are triangularly serrate, last segment elongate and pointed.

Pronotum as wide as long, widest at posterior angles, then narrowed gradually to anterior angles which are not explanate; posterior angles produced and rounded on outside, with short carina divergent from margin; disc convex, side margins barely showing in middle, broadly canaliculate at base only; surface densely umbilicately punctate all over. Scutellum slightly convex, densely punctate and pubescent.

Elytra not wider than pronotum, two and a fourth times longer than wide, sides straight and parallel in basal two-thirds, evenly arcuate to apices which are rounded; orange color covering anterior half of elytra and extending along epipleura to apical third, with first interval only slightly darker brown to area near scutellum; striae well marked and deeply punctate, intervals slightly convex and simply punctate.

Propleura densely umbilicately punctate, sternopleural plate excavated and flared in front, suture grooved only one-fourth distance posteriorly; posterior margin of propleura deeply evenly emarginate, outer angles obtusely angulate. Prosternum somewhat less densely umbilicately punctate than propleura, but more coarsely so on anterior lobe, mucro flat and slightly inclined inwards. Metasternum deeply simply punctate on disc. Abdomen deeply punctate, last sternite broadly rounded and simply pubescent. Legs dark brown on femur, tibiae and tarsi lighter brown. Aedeagus as figured (fig. 5).

Allotype female, length 9.6 mm., width 2.9 mm. (Paratype females, length 8.4–9.2 mm.). Differs very little from male in shape and color, except it is slightly larger, antennae shorter, and first elytral interval entirely orange as rest of anterior half.

Holotype male, Parma, Idaho, April 11, 1930, H. P. Lanchester collector; allotype female, Harper, Oregon, May 2, 1932 (H. P. Lanchester); both deposited in the U. S. National Museum, No. 67820. Paratypes (17 males and 4 females): IDAHO: Parma, March 17 (Lanchester), April 11 and 21 (Lanchester), April 20 (Lane); Boise, no date or collector; Rock Creek, Twin Falls Co., May 28 (Lane); Minidoka N. F., May 12 (Thatcher); Shoshone, Apr. (Portman). OREGON: Harper, May 2 (Shirck and Lanchester); Unity, May 21 (Lane); Hereford, May 6 (Lane); Hereford, May 8 (Baker). The paratypes are being deposited in the following collections: CDA, CAS, UI, HPL, and MCL.

Remarks: This species is most nearly related to *L. mirus* of California but latter has more of elytra colored a deep yellow color. Antennal segments are shorter and more triangular in present species than in most of other similarly colored species. There is very little variation among the paratypes in color and shape, except the dark color has a tendency to expand forward near suture on some, as in holotype. It appears to be the smallest as compared to rest of western *Limoni* with this black-orange coloration. It appears to inhabit areas near water and is found resting on willows, tall grasses, and shrubs on



river banks or along irrigation ditches. I have named it after F. H. Shirck, a friend and associate of long standing in wireworm research.

***Limonius snakensis*, new species**

Holotype male, length 9.8 mm. (paratype males 8.8 to 10.8 mm.), width 2.7 mm. Elongate parallel, moderately convex; body above and beneath shiny black, with only humeral region of elytra reddish orange; vestiture very fine and dark brown above, becoming lighter and heavier beneath, but never obscuring integument.

Head quadrate, moderately umbilicately punctate; frons slightly concave; clypeal margin entire, arcuate, and slightly raised; antennae extending not more than one segment beyond the posterior angles of pronotum, 2nd and 3rd segments small, cylindrical, only slightly longer than wide, together as long as 4th, the latter triangular, nearly as wide as long, 4th to 10th serrate, 11th pointed.

Pronotum as wide as long, widest at posterior angles, sides gradually narrowed to anterior angles which are not explanate; posterior angles produced and obtusely angulate on outside, with short carina slightly divergent from margin; disc convex, side margins hidden in middle, broadly canaliculate at base; surface moderately deeply punctate on disc, punctures becoming larger and umbilicate near lateral margins, separated by their own diameters. Scutellum prominent, flat, finely densely punctate, more pubescent than rest of body.

Elytra not wider than pronotum at posterior angles, two and half times longer than wide, the sides straight and parallel in basal two-thirds, evenly arcuate to apices which are bluntly rounded; orange color covering entire humeral region including basal one-third of elytra and epipleura to middle, except two intervals of black color extending forward along suture to apex of scutellum; striae well defined and coarsely punctate, intervals almost flat with fine punctures.

Propleura moderately umbilicately punctate, sternopleural plate excavated and flared in front, grooved to one-third distance posteriorly; posterior margin of propleura deeply emarginate without teeth, produced angles somewhat rectangular. Prosternum deeply finely punctate, umbilicately so on anterior lobe; mucro flat between procoxae and slightly inclined inwards. Metasternum moderately densely deeply punctate on disc. Abdomen finely densely punctate, last sternite evenly rounded and simply pubescent. Legs piceous, tarsi brown. Aedeagus as figured (fig. 6).

Allotype female, length 10 mm. (paratype females 9.5 to 12 mm.), width 2.9 mm. Differs very little from male, except slightly larger, antennae shorter than pronotum by about two segments, and abdomen more convex.

Holotype male, Wawawai, Washington, March 28, 1939 H. P. Lanchester collector; allotype female, Same locality, April 18, 1939 (M. C. Lane); both deposited in the U. S. National Museum, No. 67821. Paratypes (14 males and 13 females): BRITISH COLUMBIA: Merritt, June 9, 1948 (Neilson & Finlayson). WASHINGTON: Wawawai, March, April, May (Bales, Lanchester, Lane, Turner, Schenefelt); Cheney, May 16, 1942 (Rogers); Deep Lake, Spokane Co., May 3, (Hebard). Sun Lake State Park, Grant Co., May 9, 1958 (Knudsen). OREGON: Durkee, July 4 and May 6 (Lane); The Dalles, May 19

(Hubbard & Schwarz). IDAHO: Lewiston, April 20; Lenore, May 19 (Miller). State Creek, Idaho Co., May 14 (Barr). MONTANA: Jefferson Co., May 30. The paratypes are being deposited in the following collections: USNM, CDA, CAS, MCZ, ANSP, UI, WSC, and MCL.

Remarks: This species is closely related to *L. crotchi* which inhabits the coastal areas west of the Cascade Mts. from British Columbia southward to middle California. Besides difference in distribution the present species differs from *crotchi* in the more restricted humeral rufous area, finer punctation above and beneath, and in male genitalia. It seems to be found only along margins of streams or lakes resting on early blossoming shrubs such as wild currant and willows. Most of the specimens were collected along banks of Snake River, hence the name.

***Hemicrepidius montanus*, new species**

Holotype male, length 15.0 mm., width 4.7 mm. (paratype males 11.5–15.0 mm.).

Body robust, dark brown to black, with posterior margin and angles of prothorax, lobe of prosternum, and inflexed margin of elytra reddish. Surface slightly shiny with very fine dark brown vestiture.

Head quadrate, slightly concave on front above arcuate margin, coarsely cribrately punctate, interspaces shiny. Antennae long, extending one segment beyond posterior tips of pronotum; second segment small, shiny, third longer, almost as long as fourth and opaque like the rest; segments three to ten strongly triangular, slightly longer than wide and extending outwards to make the whole antenna much more serrate than is usual in the genus; last segment restricted at apex.

Pronotum convex, about as broad as long, sides slightly arcuate at middle and sinuate near posterior angles, gradually widening with a short prominent carina diverging from sides; disc moderately punctate with simple punctures denser and umbilicate at the sides, with partial impunctate middle line, slightly grooved at base. Surface very slightly alutaceous between punctures. Scutellum saddle-shaped with raised ridge and almost impunctate.

Elytra about two and half times longer than pronotum, converging gradually from humeral angles to apex, which is blunt; each elytron broadly convex, sides visible from above; striae distinct, deep, with elongate punctures; intervals convex and simply punctate, irregular near apex.

Propleura moderately umbilicately punctured with impunctate space near posterior margin, the latter arcuate with slightly extended posterior angles. Prosternum coarsely not densely punctate, mucro impunctate, shiny, and straight. Metasternum and abdomen finely punctate and less shiny than rest of body surface. Legs with first four tarsal segments lobed, the first and fourth smaller than second and third lobes. Aedeagus as figured (fig. 7).

Allotype female, length 15.5 mm., width 5.0 mm. (paratypes 13.5–18 mm.). Body very similar to form and color of male, except more robust and convex. Antennae several segments shorter than pronotum, the segments being less serrate than in male, though the third segment is still triangular in shape and similar to following segments.

Holotype male, Moscow, Idaho, 2560', June 23, 1932. Paul Rice collector, specimen in California Academy of Sciences; allotype female, Moscow, Idaho, June 28, 1931, 3000' Paul Rice collector, specimen in U. S. National Museum. Paratypes (25): IDAHO: Moscow, June 19, 1927; June 14, 1930; June 21, 1931; June 1938; June 11, 1930; Moscow Mt., Aug. 1, 1953; Wallace, July 12, 1935; McCall, Valley Co., July 30, 1952; Lowman, Sept. 1, 1932. WASHINGTON: Anatone, July 3, 1946. OREGON: Baker, Pine Cr., 4400 ft. June 15, 1941; Pinchurst; Halfway, Baker Co., July 4; Meacham, June 19, 1927; East Lake, June 20, 1959; O'Brien, Josephine Co., May 30, 1952. CALIFORNIA: Echo Lake, 7000' June 29, 1934. BRITISH COLUMBIA: Creston, July 14, 1929, G. Stace-Smith; June 27, 1948; Cooper Mt., July 27, 1929 G.S-S; Midday Valley, Merritt, July 4, 1923, R. Hopping; June 26, 1924, R.H.; June 25, 1924; K. F. Auden. ARIZONA: Palmerlee, Cochise Co., July; Aug.; Flagstaff, July 1941.

Paratypes deposited in following collections: UBC, USNM, CDA, CAS, MHH, JNK, and MCL.

Remarks: This species is closely related to *H. morio* LeC., but the antennal segments are more triangular and more serrate than in *morio*. The latter species is less punctate on pronotum and usually larger, especially in females. Tendency for lighter posterior angles of pronotum and other margins is distinctive in *montanus*, which is known mostly from higher elevations inland from B. C. to Arizona, while *morio* is a species of lower elevations and the coast.

#### **Hypolithus olympus**, new species

Holotype male, length 7.5 mm. (paratype males (2) 6.8–7.8 mm.), width 2.4 mm. Form semi-flattened, semi-opaque, and very dark brown in color; first segment of antennae, epipleura of elytra beneath, and legs lighter brown. Body above covered with a short golden vestiture, lighter yellow beneath and somewhat more dense.

Head wider than long between the eyes, frontal margin broadly rounded and slightly depressed at the middle, evenly densely punctate. Eyes not prominent and slightly narrower than anterior margin of pronotum. Antennae slightly shorter than the pronotum, second segment small, third longer than second and cylindrical in shape. Fourth to tenth segments as broad as long and only slightly serrate; second and third segments slightly shiny, fourth to eleventh opaque; second to sixth segments and eleventh with following lengths: .18, .25, .20, .20, .20, .25 mm. Eleventh segment blunt at tip.

Pronotum slightly longer than wide, broadly arcuate on sides, sinuate near posterior angles, which are slightly divergent; posterior angles with short carina, parallel and close to margin; disc densely punctate, more cribrately towards the sides; middle line slightly impressed; surface alutaceous. Scutellum as broad as long with punctures and vestiture same as rest of body.

Elytra twice as long as pronotum, sides parallel to behind middle length, tapering broadly to apex. Striae distinct with elongate punctures, intervals rather coarsely punctate, giving a roughened appearance to whole elytra.

Propleura with coarse shallow punctures on background of very fine punctures, posterior margins beneath sinuate, angles oblique. Prosternum shiny, punctures simple and moderately dense, cribrate on anterior lobe; micro slightly concave between the procoxae and slender to tip.

Metasternum coarsely and densely punctate, surface shiny. Metacoxal plate sinuate on inner margin before obtuse angles, then sinuate to outer margin, which is sharply pointed. Abdomen more finely and less densely punctate, the surface somewhat alutaceous and obscured by the gray yellow vestiture. Male aedeagus as figured (fig. 8).

Allotype female, length 7.8 mm. (paratype females (9) 7.3–8.2 mm.), width 2.4 mm. Form similar to male, but more flattened and with shallow depressions behind the middle of pronotum on each side about half distance from middle line to margins. This character appears in all females, but not in the males. Antennal segments similar in shape to male and body slightly more opaque overall.

Holotype male, Olympic Hot Springs, Washington, Aug. 4, 1942 M. H. Hatch collector, specimen in Hatch Collection, University of Washington, Seattle; allotype female, with same data, deposited in M. C. Lane Collection, Tacoma. Paratypes (10): with same data, and one male from Pacific City, Oregon, July 20, 1941 (K. M. Fender). The paratypes are being deposited in the following collections: USNM and CAS.

Remarks: This species belongs to the group with *H. funebris* and *squalidus*, with more or less opaque and roughened surfaces. It varies from *funebris* in simpler punctation on pronotum, less flattened above, and with coarse punctation beneath. From *squalidus* it varies in the finer vestiture and coarser punctation beneath, situation on inner posterior margin of metacoxa and more uniform darker coloration. The aedeagus of male in *olympus* differs from either of the others by the decidedly angulate apex to lateral lobes. It is not known just how this species was collected, but presumably along the margin of a stream.

#### **Megapenthes gentneri**, new species

Holotype male, length 7.0 mm. (paratype males 6.4–7.6 mm.), width 2.2 mm. Form bluntly elongate; body maculate on black, with base and posterior angles of pronotum, slightly more than one-third of anterior portion of elytra including the epipleura, and a spot on each elytron about one-third from apex and 5 to 6 intervals wide, yellow in color with some differences in shading. Mouthparts, anterior angles of propleura and legs also yellowish. Vestiture very fine, golden, somewhat denser beneath.

Head quadrate, slightly convex, simply punctate; front evenly rounded, eyes not prominent, about as wide as anterior angles of pronotum. Antennae not quite attaining posterior angles of pronotum, second and third segments small, subequal and cylindrical; fourth segment longer than second and third together, triangular in shape, with outer angles prolonged slightly, as are the following segments, except the last which is elongate oval; length of second to sixth and



eleventh segments, in mm.: .10, .10, .30, .25, .25, and .30. Extra long supplemental hairs on 4th to 11th segments secondary sexual structures, and give antenna a hairy appearance.

Pronotum as broad as long, sides parallel, broadly rounded to anterior angles; side margins disappear from dorsal view in anterior half, only very slightly sinuate before posterior angles, which have a short sharp carina divergent from margin; disc with very fine sparse punctures, less dense towards side margins. Scutellum narrowly triangular and moderately rugose, punctures not distinct.

Elytra twice as long as wide, parallel on anterior third, gradually narrowing to apical third and more sharply narrowed to apex; dorsal surface flattened, humeral angles prominent, striae deeply punctate, intervals flat and slightly rugose; apex of elytra with coarse marginal spinules.

Propleura finely rugosely punctate, surface slightly alutaceous, sternopleural plate slightly flared in front; prosternum shiny with distinct simple punctures; mucro deeply indented between procoxae and only slightly bent upwards to a point.

Metasternum densely and somewhat rugosely punctate; metacoxal plates not widely expanded on inner third, angle broad, with outer portion retaining its width to the side margins of elytron. Abdomen slightly more finely punctate than metasternum, both slightly alutaceous on surface. Aedeagus as figured (fig. 9).

Allotype female, length 8.0 mm. (paratype females 6.9–8.9 mm.), width 2.3 mm. Form coloration, vestiture, and punctation same as in male. Female is slightly larger and broader; antennae shorter, without extra supplemental hairs.

Holotype male, Butte Falls, Oregon, July 3, 1951, Gentner collector, specimen in the U. S. National Museum, No. 67822; allotype female, same locality and date, Lane collector, in Lane Collection. Paratypes (22): OREGON: Same data as holotype. WASHINGTON: Tacoma, July 10, 1960 (Lane). BRITISH COLUMBIA: Ladysmith, Aug. 13, 1959 (Kelton); Home, Aug. 27, 1948 (F. I. S.). CALIFORNIA: Whitehall, Eldorado Co., June 21, 1931 (Saylor); Riverton, July 6, 1931 (Zimmerman). Paratypes are being deposited in the following collections: CAS, CDA, JNK, MHH, and LGG.

Remarks: This species seemed at first to be only a color variation of *M. caprella* LeC. But *gentneri* differs by having larger broader form, more hairy, serrate antennal segments, different male genitalia, and by the males and females having identical coloration. The other related species, *stigmatosus* LeC. and *caprella* LeC., show sexual differences in pattern of maculation on elytra, the males usually with much reduced areas of yellow and females never with anterior portion of elytra all yellow. The last paratype mentioned by Brown (1933:140) in his description of *M. californicus* is really this new species, though the specimen is immature; it is the above designated paratype from Riverton, Cal., Aug. 6, 1931 (E. C. Zimmerman). This new species is named for my good friend Louis G. Gentner of Medford, Oregon, with whom I have spent many enjoyable hours collecting in southern Oregon.



***Ampedus bakeri*, new species**

Holotype male, length 10 mm. (paratype males 8–10 mm.), width 3 mm. Form moderately elongate, somewhat convex, with shiny integument; color of body black, except elytra, which are bright reddish orange without black markings; antennae and legs dark brown, first three segments of antennae and tarsi lighter or reddish, vestiture piceous on head and pronotum, orange on elytra, and yellow on ventral surface of body, coarse semi-erect on dorsum, but finer and decumbent ventrally.

Head slightly convex, densely umbilicately punctured; antennae barely reaching to posterior angles of pronotum, second and third segments small, shiny, the third segment a little wider and longer, second and third together slightly longer than fourth; segments four to ten triangular, a little longer than wide, serrate, with outer angles rounded, punctate and pubescent.

Pronotum slightly wider than long, sides sub-parallel in posterior half, broadly rounded and narrowing to anterior angles, very slightly sinuate in front of posterior angles, which are acutely produced with short carina divergent from side margin; disc convex, densely coarsely punctate as on head, punctures umbilicate on sides, finer and less dense in middle at base; median line barely canaliculate at base. Scutellum flat, coarsely punctate, with vestiture black.

Elytra, only slightly wider than pronotum, a little over twice as long as wide, the sides sub-parallel to apical third, evenly arcuate to apex, which is bluntly rounded; striae shallow with round punctures separated by approximately their own diameters, intervals flat, finely, irregularly punctured.

Propleura moderately densely and coarsely punctate, interspaces finely alutaceous; sternopleural plate widely excavated and flared somewhat in front, grooved to one-third distance to procoxa; prosternum deeply punctate, punctures a little sparser than on propleura, interspaces shiny; mucro grooved between coxae. Metasternum, coxal plates, and abdomen moderately densely punctate, the punctures becoming finer towards apex of abdomen. Aedeagus as figured (fig. 10).

Allotype female, length 10.5 mm. (paratype females 8.8–11 mm.), width 3.4 mm. Differs from male very slightly, being on average only a little broader and longer, with antennae somewhat shorter, and pronotum somewhat more robust.

Holotype male, Meacham, Oregon, May 13, 1933, M. C. Lane collector; allotype female same locality, June 8, 1930, M. C. Lane collector; both deposited in the U. S. National Museum, No. 67823. Paratypes (over 100): OREGON: Meacham, May 13 to June 23 (Lane); Union, April 27 (Baker); Baker, June 21 (Baker); Blue Mountains, Bone Springs, 5,800', June 27 and July 2 (Lane, Lanchester); Blue Mountains, Squaw Springs, 5,000', July 5 (Lanchester); Blue Mountains, Tollgate Road, 3,500', June 7 and 25 (Lanchester, Gibson); Mt. Hood, Cloud Cap Inn, 6,000', June 12 (Lane, Lanchester); Mt. Hood, Government Camp, 4,000', July 6 (Jones); Mt. Hood, Timberline Lodge, 6,000', July 6 (Lane); Mt. Hood, Brightwood, March 21 (W. W. Baker); Fort Klamath, May 26 (Lane); Crater Lake, April, July 13, and Aug. (Brode-Keen); Mt. McLoughlin, Fish Lake, June 12 (McClay); Butte Falls, April 27 (McClay); Ashland Nat., Jackson Co., July 14 (Scullen); Lake-O-Woods, Klamath Co., July 5 (Malkin);

Keno, Klamath Co., May 22 (Schuh); Upper Klamath Lk., May 17, (Schuh). WASHINGTON: Blue Mountains, Mormon Grade, May 3 and 31 (Lanchester, Gibson); Blue Mountains, Lewis Peak, July 3 (Lanchester); Blue Mountains, Blacksnake Ridge, 3,500', June 16 (Lane); Mt. Rainier, White River Camp, July 27 (Wilcox); Mt. Rainier, Paradise Park, 5,400', July 18 (Lane); Tampico, April 10 (Rolfs); Mt. Adams, West Klickitat, 3,500', July 8 (Morley); Carson, August 15 (Gibson); Boulder Cave, Yakima Co., May 10 (Nelson). IDAHO: McCall, May 17 and June 10 (Lanchester, Shirek, Gibson); Cedar Mt., Moscow, 4,000', May 5, 21 (Lane, Downie); Dreary, May 14 (Downie). CALIFORNIA: Giant Forest, May 31; Truckee, Nevada Co., June 23 (Arnaud); Sequoia N. P., 5000-7000', July 24 (McClay); Yuba Pass, Sierra Co., June 2 (McClay); Manzanita Lake, Lassen, N. P., May 25 (Anderson); Buck's Lake, Plumas Co., July 19 (MacSwain); Fallen Leaf Lake, Eldorado Co., June 22 (Madsen); Lake Tahoe, July 20 (Saylor); Lake Alpine, July 16 (Allen); Castle Lake, Siskiyou Co., June 6 (Chandler). The paratypes are being deposited in the following collections: USNM, CAS, CDA, MCZ, ANSP, MCL, HPL, MHH, JHB, JNK, ATM, LGG, and KEG.

Remarks: This species has been confused with *A. phoenicopterus* Germ., both having all red elytra and practically same distribution. They differ in shade of color of elytra, *bakeri* having a richer more orange red color. Vestiture of head and pronotum is piceous in *bakeri* and yellow in *phoenicopterus*, and is also coarser and more erect. Vestiture of elytra is orange in *bakeri* but dark grey in the other species. Aedeagi of males are quite different, the lateral lobes in *bakeri* being blunt at tips with rounded angles, while those of *phoenicopterus* are sharp and pointed. Both species develop under bark of rotting pine stumps and logs throughout the Pacific Slope, *bakeri* being probably the rarer species. It is named for my good friend and companion on many collecting trips, James H. Baker of Baker, Oregon.

#### *Agriotella fusca*, new species

Holotype male, length 6.2 mm. (paratypes 5.4-6.5 mm.), width 1.6 mm.

Form elongate, color nearly a solid brown with only angles of pronotum and propleura somewhat lighter. Vestiture recumbent and yellowish.

Head slightly wider than long, slightly convex on front, with frontal margin broadly rounded; punctures closely umbilicate. Antennae attaining pronotal posterior angles, second and third segments subequal, shining, cylindrical, together longer than fourth; fourth to tenth longer than wide, punctate, and slightly serrate; second to sixth segments and 11th segment with following lengths, in mm.: .12, .12, .20, .20, .20, and .30.

Pronotum longer than wide (1.7 × 1.4 mm.); sides parallel from posterior angles to anterior third, which is slightly wider; disc convex laterally, slightly so longitudinally, finely umbilicately punctate, a little more densely towards sides, intervals shiny; posterior angles with fine short carina divergent from margin. Scutellum triangular, with fine, rugose punctures.

Elytra two and half times longer than wide ( $4.0 \times 1.6$  mm.), parallel in anterior two-thirds, gradually narrowed in apical third, apices rough and only slightly truncate at tips. Striae closely, elongately punctate, shallow; intervals flat and finely rugosely punctate; dorsal surface slightly convex laterally.

Propleural suture grooved in anterior third, with dense umbilicate punctures, except with smooth area near base, outer angles pointed; prosternum with dense umbilicate punctures, only slightly lobed, mucro indented between procoxae and carinate to apex. Mesosternal cavity elongate.

Metasternum moderately densely punctate, slightly less so on abdomen. Metacoxal plates with inner angle nearly rectangular, sinuate to outer margin near elytra. Legs slender, tarsal segments becoming gradually shorter apically. Aedeagus as figured (fig. 11).

Allotype female, length 5.5 mm., width 1.5 mm. Varies from male in being more reddish brown, pronotum somewhat wider at anterior third, proportionally not as elongate, antennae shorter, intervals of elytra more rugosely punctate, and metacoxal plates obtusely angulate on inner third.

Holotype male, near Kahlotus, Washington, April 18, 1935, M. H. Hatch collector, specimen deposited in Hatch Collection, Seattle, Washington. Allotype female from Washington Co., Utah (no date) (Chas. Schaeffer Coll.) in M. C. Lane collection at present. Paratypes: OREGON: Hart Mtn. Antelope Refuge, May 15, 1954 (O. C. Nelson). IDAHO: Twin Falls, June 24, 1928 (R. W. Haegele); Twin Falls, May 30, 1914 (C. W. Creel). Paratypes in M. C. Lane collection at present.

Remarks: This distinct species has been collected from sagebrush in the Great Basin only rarely so far. It shows only slight variation in color from reddish brown to brown.

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